

blueprint

Energy Efficiency Division

BUILDING STANDARDS

- AB 970 Part of the Solution

During the recent summer months, California experienced a number of "power watch" days in which consumers and businesses were asked to reduce their electricity use to avoid power outages. Customers in the San Diego area saw their utility bills rise over 200 percent. California will continue to face considerable risk of ongoing high electricity prices and outages, depending on our weather in the next few summers.

On September 6th Governor Davis signed the new California Energy Security and Reliability Act of 2000. This act, also known as Assembly Bill AB 970, presents a balanced response to the electricity problems facing the state. The act will result in expedited power plant permits, "fast track" new energy standards for buildings and appliances, and a \$50 million grant program to reduce peak electricity demand. The Energy Commission and the Public Utilities Commission will work together to implement these and related programs.

The Energy Commission is directed by AB 970 to adopt and implement

building and appliance standards within 120 days (January 4, 2001) that result in "maximum feasible reductions in wasteful, uneconomic, inefficient or unnecessary consumption of electricity." The Commission's rulemaking for residential and nonresidential building standards is underway. For more information regarding the building standards contact Don Kazama at dkazama@energy.state.ca.us. For appliance standards information contact Valerie Hall at vhall@energy.state.ca.us.

The grant program described in the bill addresses price-responsive HVAC and lighting systems, cool communities, public universities, State buildings and facilities, LED traffic signals, and water/wastewater treatment pumps and equipment. For information on these grant programs, contact Mike Sloss at msloss@energy.state.ca.us.



QUESTIONS and ANSWERS

RESIDENTIAL



I am having trouble with my CALRES program. I finished entering all of my information, but I have an error saying, "undefined volume". The only place I can find to enter the volume is under BUILDING INFO at the bottom of the page, but I can't access that portion of the screen. What can I do?



You should begin your data entry in a different manner. An error message often means that you didn't follow the correct procedure for modeling a home using the CALRES program. Whenever you use CALRES, you must start with an existing file. To do this you go into the FILE menu and choose RETRIEVE. Every program has a file named SAMPLE. Start by using this existing program, and then change the information so that it corresponds to your work. Following this procedure ensures that the volume information at the bottom of the BUILDING INFO page will be automatically filled-in based upon the information entered in the ZONES section. Remember that when you have completed your data entry, you must save it under a new file name.

NON-RESIDENTIAL



I am interested in relocating a register within a room of a nonresidential building. At the same time, I will be increasing the occupant density. Do I need to meet the ventilation (outdoor air) requirements?



No, the standards include an exception for relocating components. For any nonresidential mechanical alterations see section 149 (b) of the *Energy Efficiency Standards for Residential and Nonresidential Buildings*.



"Exception 2 to Section 149 (b): When existing heating, cooling, or service water heating systems or components are moved within a building, the existing systems or components need not comply."



I have an existing retail space that I am converting into an office. I want to remove the existing track-lighting fixtures and install new fluorescent lighting fixtures by extending the tracks and moving the heads. Do I have to comply with the lighting requirements?



Yes, by extending the track you are increasing the lighting load and must comply with the standards. The track itself, and not the track heads, is considered the lighting fixture, and extending the track is considered to be adding more lighting fixtures. Since you are increasing the lighting load, it is considered an alteration and according to Section 149, you must follow the requirements set forth in the Energy Efficiency Standards.



“Alterations to existing lighting systems that increase the connected lighting load or replace more than 50 percent of the lighting fixtures shall meet the requirements of Section 146.”



I have an existing building in which I want to change the heads of the track lighting from incandescent to fluorescent. I am only making this change in one room, but I have permitted the entire building for alterations not involving the lighting. Do I have to comply with the Standards?



No, since your alteration is less than 50 percent of the permitted area, you do not have to comply with the Standards for lighting if you are only changing the

heads on the track. The amount of energy that is attributed to a track lighting system is based upon how many linear feet of track there are, and not how many, or what kind of track heads are connected to the track. You may increase the connected lighting load on the existing track up to its rated capacity; however, you cannot increase the length of the track unless a current limiter is used to regulate the total volt-amperes available to the track system so that the total wattage for the new system is equal to or less than the original track lighting system.

(See previous question/answer).



When determining compliance with the lighting part of the nonresidential standards, should I include planned plug-in lighting as part of the Actual Lighting Power Density?



Yes, Section 146 (a) of the Standards states,

“The actual lighting power density of the proposed building is the total watts

of all planned permanent lighting systems (including, but not limited to track and flexible lighting systems, lighting that is integral with modular furniture, movable displays and cabinets, and internally illuminated case work for task or display purposes) minus any adjustments allowed under Subsections 1 through 4."

The parenthetical portion of this excerpt helps define "planned permanent"

lighting. Check to see if the lighting in question is listed in Section 146 (a) 3 as being excluded from the actual lighting power density. If plug-in lighting will be installed to meet the lighting needs of the occupants, it should be shown on the plans. If the plug-in lighting is shown on the plans, and is not listed as

an exemption in Section 146, it must be counted as part of the actual lighting power. If an increase or change in the type of lighting happens prior to final inspection, the building inspector should determine compliance based upon confirmation that the lighting power density of the actual constructed building does not exceed the lighting power density shown on the plans.



Correction to Blueprint 63.
Contact for CHEERS is:
Tom Hamilton, Executive Director
Thamilton@CHEERS.org
1-800-424-3377



Building departments perform both a plan check and field inspection to determine whether or not the building complies with the Energy Efficiency Standards

Did you know?

Standards, Manuals, Forms, Computer Compliance, Conferences and Training Calendars, Energy Efficiency Information and Resources, and MORE

Did you know that the Energy Commission Web Site contains all of the Title 24 information that you could possibly want? Where else can you get copies of the Residential and Nonresidential Manuals, Standards, and all of the compliance forms for FREE? Nowhere! Not only does the Commission Web Site have all of this information, it has lots more. All of the approved computer programs for energy analysis and Alternative Calculation Manuals for both Residential and Nonresidential can be accessed via the Internet. Also, you can find the update to version 1.35 of the CalRes software. The Web Site can even keep you up to date on possible changes to the Standards being developed in response to AB 970. For information on Blueprints, appliances, additions and energy saving ideas, visit the California Energy Commission's Web Site!

[www.energy.ca.gov/title 24/](http://www.energy.ca.gov/title_24/)

New SDG&E Program Offers Free Services and Cash Incentives

Launched Sept. 1, 2000, SDG&E's Home Energy Partnership offers free services and cash incentives to home builders, energy consultants and allied professionals who incorporate energy-efficiency upgrades in new residential developments. Single- and multi-family projects located in the utility's service area are eligible.

The program offers a \$400 incentive for each single-family home that meets the Energy Star® performance target and a \$500 incentive if performance is 10 percent better than the target. Multi-family projects may qualify for incentives of \$60 per housing unit, plus an energy support team incentive of \$750 to \$2,000. In addition, the program offers design assistance, free training, marketing support and appliance rebates.

For details, contact Julieann Summerford, program manager, at (619) 641-7103 or [<jsummerford@sdge.com>](mailto:jsummerford@sdge.com).

How to choose your HVAC system

Upgrading the equipment in a residential HVAC system may only capture a fraction of the potential energy savings. Up to 35 percent of additional energy savings can be achieved through proper selection, sizing, installation and maintenance.

Where does one go to get all of the above information? It's currently available (at no charge) in a comprehensive, easy-to-understand document recently completed by the Consortium for Energy Efficiency (CEE), a national non-profit energy organization. This document, entitled Specification of Energy-Efficient Installation and Maintenance for Residential HVAC Systems, can be found on the CEE Web Site at www.ceeformt.org. It includes performance specifications, step-by-step procedures, verification protocols and dozens of illustrations.

The specification can be used as a training document, an installation field guide and a platform for energy-efficiency programs, both on the national and regional levels. These energy-efficiency practices can be incorporated into national certification programs for contractors. CEE is currently discussing this option with North American Technician Excellent (NATE).

For additional information about CEE's Residential HVAC Specification, contact Denise Rouleau at 617-589-3949, ext. 204, or [<drouleau@ceeformt.org>](mailto:drouleau@ceeformt.org).

Many Energy Commission staff help produce this publication. Among those providing expertise for this edition are: Stacey Jo Ross, Student Editor; Beverly Duffy, Graphic Artist; Elaine Hebert; Advisor to the Editor; Jon Leber, Technical Advisor; Rob Schlichting, Media and Public Communications; Merry Bronson, Photographer. Thanks also to: Valerie Hall; Rob Hudler; Tav Commins; Nelson Peña; Bruce Maeda; Gary Flamm; Mazi Shirakh; Tony Rygg; Debbie Friese, Chris Fultz; Suzie Chan; Claude Heiney; David Lopez; Linda Comie'r; Joey Swiencki.

Nonresidential Compliance Forms Are Now Available in AutoCAD

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